

A PARTIAL INTER-LOCKING METAL CONTACT STRUCTURE FOR SEMICONDUCTOR DEVICES AND METHOD OF MANUFACTURE

ABSTRACT OF THE DISCLOSURE

[0040] A structure and method of fabricating a "Lego"- like interlocking contact for high wiring density semiconductors is characterized in that the barrier liner formed in the contact via extends only partially upwards into the adjacent wire level. As a consequence, current crowding and related reliability problems associated with conventional prior art interconnect structures is avoided and structural integrity of the contact via (metal stud) structure is enhanced. The novel "crown" shape of the Lego-like interlocking contact structure that is fabricated to extend in an upward direction may be employed for other integrated circuit applications including forming capacitor (e.g., MIMCAP) and heat sink structures due to its increased surface area.